

## Comparison of Ankle Proprioception Between Blind and Healthy Athletes

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**Objectives:** The positive effect of the visual sensation on the proprioceptive quality is well known. Although other senses of the congenital blind individuals have been proven to be increased more than healthy ones, there has been no data about the proprioceptive quality of congenital blind persons. The aim of this study is to determine the quality of ankle proprioception in congenital blind athletes.

**Methods:** 15 congenital blind athletes (10 males and 5 females) with a mean age of  $24 \pm 2.9$  (ranging from 20 to 29), and 15 healthy athletes (10 males and 5 females) with a mean age of  $24.6 \pm 3.05$  (ranging from 20 to 29), from the same athletic department, were included in the study. Proprioception was evaluated by using the technique of joint position sense, and absolute errors during the reproduction of six target angles (plantar flexion 100, dorsiflexion 50, inversion 100 and 200, eversion 100 and 200) were detected in dominant and nondominant ankles of both groups. Athletes were measured both eyes open and closed. Statistical analysis was done by using Mann-Whitney U and Wilcoxon Signed Ranks tests.

**Results:** When dominant extremities were compared while eyes open, there was only a difference in 50 dorsiflexion measurements statistically in favor of blind ones ( $p < 0.05$ ). When dominant extremities were compared while eyes closed, blind athletes got less wrong in four of the six target angles statistically ( $p < 0.01$ ), when non-dominant extremities were compared while eyes closed, blind athletes got less wrong in all angles statistically ( $p < 0.01$ ). The ankle proprioception of the blind athletes were better than the normal athletes. The ankle proprioceptions of the normal athletes further deteriorated when their eyes were closed.

**Conclusion:** We found that the ankle proprioceptions of congenital blind athletes were better than the normal athletes. So additional closed-eyes exercises can help to reach a high proprioceptive level of athletes in a normal season which in terms may decrease accidental traumas.

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